

Elk Hoof Disease Public Working Group Meeting August 15th, 2017

Public Working Group meeting 8-15-2017

WDFW Region 5 Headquarters, 5525 South 11th St, Ridgefield WA 98642

Public working group members in attendance: B. Richardson, Dr. T. Besser (phone), D. Carlson, W. Clifford, C. Chandler, D. Cothren, S. Ogden, C. Madsen, B. Moeller, M. Rochelle, M. Smith, C. Powell.
WDFW staff in attendance: A. Aoude, B. Calkins, K. Garrison, B. Hoenes, S. Jonker, K. Mansfield, J. Nelson

1305 Meeting begins - S. Jonker

Introductions. Agenda outlining

Reminder regarding public testimony form – order they are received to K. Garrison

Presentation starts 1306

Public working group overview and purpose.

Changes in group membership. B. Richardson assuming position with RMEF

Hoof disease not concentrated in SW WA anymore. Moving hub for hoof disease to Olympia to meet needs for resource and expanded scope. New policy lead and coordinator identified.

WDFW has prioritized 4 efforts with input from Public Working Group. Better understand prevalence and distribution, survival & productivity, and addressing severely affected elk with euthanasia

Update on diagnostic efforts - S. Jonker

Consensus statement 2014

Working closely with USDA and CSU

Know it is rapidly progressing disease, but little evidence with regard to recovery

M. SMITH – interprets that TAHD is fatal?

S. JONKER – refers to single case, unsure what recovery could mean

Confirmed positive cases outside of core area. Skagit, Whatcom, Thurston, King

M. SMITH: asks about additional cases in Oregon?

K. MANSFIELD – answers yes, confirmed cases in OR including eastern Oregon

Update on biomedical research

Evaluating immune response of elk to bacteria, blood testing to previous exposure to the disease, archived serum samples.

M. SMITH – references point 2 (assumed reference to polymicrobial aspect of disease)

S. JONKER – emphasized it is a complex disease with several factors involved

Discussed continuing evaluating disease progression and elk immune response

Future research – trace minerals

Fecal testing and rectal swabs, route of transmission of disease

Inoculating healthy sheep with diseased hooves aka ‘sheep model’

M. SMITH – notes work is not related to habitat. Will WDFW test soils, look at carrying capacity?

S. JONKER – Agency has talked about looking at the soil. Very cost prohibitive to do soil testing.

Many bacteria in the soil it’s difficult to know what’s going on (isolate bacteria).

M. SMITH – concerned by MSH eruption was 37 years ago and habitat loss, should be area of priority. Nutrition is one of the key factors. Lot of information is there and projects regarding habitat and nutrition.

S. Jonker - WDFW prioritized research based on input from the PWG, and habitat is still on the list but not in the priority research needs

B. HOENES – referenced Andrew Geary’s master’s thesis from university of Alberta (focused on elk nutrition and habitat)

- M. SMITH – recalled it being pretty old (5 years) and remembered that they did find nutritional limitations and low carrying capacity in the area
- B. HOENES – noted that from a research perspective its contemporary, they did find limitations in treated stands with a strong herbivore interaction among treatment sites
- A. Aoude – asked to clarify the sheep model (referenced earlier in ongoing research)
- K. Mansfield – explained national animal disease center research (on treponeme transmission)
- D. COTHREN – asked about the nema (?) block. Those elk are healthy but close to the Willapa hills. Asked why.
- S. JONKER – noted it as a great question. Big question is understanding how the disease will behave differently among different areas. For instance, will the disease respond and behave similarly in new areas (e.g., Skagit). Lot of factors involved.
- D. Cothren – noted forest practices are the same among blocks, and asked what’s different. Asked if WDFW should focus on that block where they aren’t getting hoof rot (sic)?
- B. Hoenes – noted a big difference in the density of animals. 5 times higher density in MSH vs. Willapa hills.
- D. Cothren – noted Wahkiakum county is the same type environment, had it [hoof disease] in the late 90s. Escalated into the higher country.
- M. SMITH – noted MSH herd is really stressed, tourism, hunting, and maybe other herds don’t have a lot of pressure on them. Relayed it as disheartening to see the elk pressured so intensely and increase the stress on animals. Especially in critical times of the year (breeding) and wintering habitat, might be something to consider, how much hunting and how stressful it is on the animals.

Last item of future research is looking into genetic resistance to the pathogens, something groups have identified as a research item.

Prevalence and distribution, survival and productivity research update – B. Hoenes

Prevalence and distribution of disease. It’s important for management and for communication. Very difficult thing to do, to estimate. Primary tools are the online tool, citizen science, aerial surveys, and hunter questionnaire

- Online tool for reporting limping, dead elk with deformities
 - Number of reports higher earlier on, geographic extent
 - Reports are decreasing
 - D. COTHREN – states the answer is that there are no elk. There are no elk to observe
 - B. HOENES – recognizes comment
 - M. SMITH – asks about the population estimate and percent affected [elk]?
 - B. HOENES – answers it will be addressed later on in presentation
 - M. SMITH – remarks people don’t do online reporting, they’re scared of reporting, scared of sharing information and how it is used, and the information may not be accurate
 - B. HOENES – answers there are limitations to it, and the limitations are recognized
 - Most reports are coming from the SW, decreasing over time in the core area. Several reasons why reports might be decreasing – possibly because elk aren’t there or individuals are no longer reporting
- Citizen science effort of 2015.
 - Observation conditions (distance, activity, time, habitat) driving a lot of detection of diseased animal, had to correct by group prevalence. 48% groups had at least 1 limping elk.
 - Generated a predictive map indicating core area in the MSH and Willapa hills, moving away disease risk declines.
 - Given the limitations and logistical challenges we moved to aerial survey

- Aerial survey 2017
 - Using elk limping in a group as index of disease. Difficulties in classifying a group as diseased. Big challenge is the size of the area. Cost and time. Transect based approach, 2100 miles.
 - Observed elk for 2 minutes based on previous experience. Standardized methodology.
 - Similar results to citizen science in spatial distribution, raw data, overall patterns
 - Some evidence that probability is related to habitat
 - Have to have 2 limpers. More likely to have TAHD, more observable
 - Results differ by inclusion of 1 vs 2 limpers.
 - Continuing to evaluate methodology moving forward
 - Generally, results agree with citizen science and identifies core area in southwest Washington

- Hunter questionnaire
 - Fall 2016 results
 - If successfully harvest elk in Western Washington, asked if hooves were deformed or had abnormalities
 - 15% said yes, in southwest only 19%, Willapa 15% and MSH 22%.
 - Biggest downside is the spatial resolution
 - M. SMITH – noted his observation of 9 bull elk in 524 had hoof disease
 - B. HOENES – remarked as probably representative
 - Winston GMU had highest with 53%
 - Remember it's just a proportion and there is variance around the estimate, the point estimate isn't exact. 663 capitol peak around 30%, 550 around 30%, but only 3 taken in capitol peak vs. 119 in 550. Keep in mind when examining the results
 - M. SMITH – asks if results separated by sex?
 - B. HOENES – answers yes, not much of a difference

- How many “yes's” are hoof disease? To answer, WDFW requested participation from permit hunters to help determine the agreement between hunters and biologists. About 500 total requests
 - Matched questions to the online tool
 - Asked if yes/no and asked to submit hooves
 - Only ~70 submitted. Only 25 had TAHD, 27 were normal, false (+) 4% and false (–) was 48%. Very hard to detect early stages, but the late stages had better agreement but still high (27%) false (–)
 - D. COTHREN – asks if any one look at joint swelling? Sees a lot of swelling in joints but not necessarily hoof abnormalities. One died in front of him with swollen joints
 - B. HOENES – we ask them to sever above the hoof, including joint, and we do ask about abnormalities and that may show up in our data as false positives. But doesn't seem like a problem with current sample sizes
 - B. HOENES – you can use the false negative rates to correct these estimates and they line up around the 40-50% overall. Very similar to citizen science and aerial surveys. Lot of agreement preliminarily

Discussed the limitations of each approach and their strengths. Not one is estimating true prevalence. Each method is a relative index of disease prevalence and distribution. Displayed a comparative slide of all 4 methodologies and highlighted their similarities.

WDFW will be focusing on the hunter questionnaire moving forward. Cost prohibitive to use the aerial survey

Open to questions

- M. SMITH – asks for a population estimate? Notes he understands we need to know prevalence and distribution but we [WDFW] haven't identified the cause and how the disease is transmitted. Notes public outcry (reference to SB 4574), bill passed, prevalence study is interesting but we [WDFW] aren't treating live animals – assumed to know what it is, but maybe not, are we [WDFW] going to take a more proactive approach to this? As in treating animals. Paramedic anecdote and feels like we're bleeding, used to have 120 elk on average for 14 years, dropped to 75, and now zero. Most of the herds in his area are 75% affected, has seen 38 dead elk with hoof disease. Are we [WDFW] going to change the discussion and direction?
- B. HOENES – feels WDFW has been proactive, and is very excited about what the future holds. Argue that prevalence is still very important. The day we [WDFW] identify some tool to make an impact or decrease prevalence we need to be able to monitor, we have a tool developed to monitor and quantify that affect and being successful
- M. SMITH – understands point, but money has been awarded, we [WDFW] aren't doing habitat work, being premature when we [WDFW] don't understand cause and effect, feels prevalence is premature
- B. HOENES – argues that [WDFW] has been doing a lot of research on cause and effect, the transmission, sheep model will be fundamental to understanding, efforts heading down a good path.
- D. COTHREN – asks what's your take on the reproduction? Sees lots of calves, but hoof disease is coming in the Fall and in the Spring they have hoof rot (sic) and start dying again. States it is seasonal, asks if we [WDFW] monitoring those types of things and checking seasons and watching calf elk are they getting it right away?
- B. HOENES – [WDFW] isn't looking specifically at neonates, but know calves are getting it at an early stage in their life. [WDFW] didn't have to search very hard to find infected elk
- D. COTHREN – Emphasizes he is still trying to point out some things that we research and we really look at. Emphasizes the need to get on it, it isn't going anywhere. Thanks God for nature. Disagrees on number of seasons, 7-8 months of the year hunting. Asks if that is too much pressure? Maybe their system can't fight off that pressure. Isn't seeing calf production in his county. We're [WDFW?] killing them off. We [WDFW] don't know what the disease is yet, need to know what the disease is before action, asks to justify seasons.
- M. SMITH – asks to clarify “sheep model”?
- K. MANSFIELD – clarifies it as work being done with the same disease in cattle. It is a controlled study. Able to control diet, other variables that may affect the disease. [WDFW] Shipping hooves from infected elk to Iowa and inoculate domestic sheep. Able to look at different stages of the disease, particularly early stages where other bacteria may play a role to facilitate treponemes
- M. SMITH – asks wouldn't it be quicker doing It with elk. Discussed in the past, isn't being done.
- K. MANSFIELD – we [WDFW] are doing that with elk, taking samples from different stages of the disease
- M. SMITH – asks if those are controlled elk?
- K. MANSFIELD – answers no, from MSH elk survival study
- M. SMITH – asks if there is no value in testing wild elk?
- K. MANSFIELD – answers possibly. The issue is where to do that, logistically it's very difficult. It's a really big step to go from domestic sheep to wild elk in the right conditions.
- S. JONKER – sheep model should inform that
- M. SMITH – asks won't that be better? There are a lot of hoof diseases. Only a few cures for it. Nutrition, antibiotics, treat at hoof level. Isn't it possible to do a treatment study to identify if it can be cured?
- K. MANSFIELD – answers yes, they are all research questions that can be pursued in the right conditions
- M. SMITH – clarifies we [WDFW] aren't going to do that?
- K. MANSFIELD – answers no, not in the near future

Survival study (~1400) – B. Hoenes

Objective outline (6) – estimate survival of adult females, cause specific mortality, effects on pregnancy, effects on productivity, effects on body condition, and understanding of progression. MSH was chosen because previous research (McCorquodale) gives baseline for comparative analysis and disease prevalence in the area. Also reduces stochastic variability – factors that can affect vital rates like habitat and density, etc.

- M. SMITH – notes 3 point or better harvest regulation, letting spikes go, high ratio of cows has been historic over time. Looking at a genetic perspective, smaller antlers, asks if we are getting inbred with the herds?
- B. HOENES – answers genetic variability is really high in individual elk. Very rare to have low diversity in ungulates in general. Exceptions are Tule elk in California, doesn't think it's the case in MSH
- M. SMITH – asks if elk were in poor condition going into winter before hoof disease?
- B. HOENES – answers generally lactating elk are going into winter in poorer condition for healthy elk, less clear for diseased elk.
- Elk are probably reaching peak condition in October, but we [WDFW] don't sample until December, but we still don't think elk are getting into very good condition before winter.
- B. Richardson – clarified that all the body fat percentages are the same with the Cook's (John and Rachel Cook, researchers) work?
- B. HOENES – clarifies it as the same methodology
- M. Smith – emphasizes nutrition and habitat, carrying capacity, poor conditioned animals
- B. HOENES – remarks that everyone would agree the population was over carrying capacity. Implemented opportunities to lower population below capacity
- A. AOUDE – notes that carrying capacity is a moving target. Never the same year after year

Pregnancy and productivity

Consistently lower in diseased animals, but has been historically low in this population.

- Some animals with hoof disease are still producing calves and unclear if they are experiencing different calf survival
- Lower lactation rates for diseased animals, makes sense given lower pregnancy rates

Study animal (adult female) survival at Mount St. Helens

2015: 0.68 diseased, 0.79 healthy

2016: 0.59 diseased, 0.78 healthy

A. AOUDE – noted un-hunted animals should be around 90%

B. Hoenes – clarified with hunting we [WDFW] hope for 80-85% and our survival rates include harvest

Continued presentation

M. SMITH – asked about collared animal composition, B. HOENES clarified it is all females

B. HOENES – noted that we haven't had a mortality since April

Cause of mortality

Primarily general debilitation for diseased animals

M. SMITH – requested for the record, local public say the game department went and shot a bunch of animals, did you ever take animals from those units?

B. HOENES – answers no

C. MADSEN – asked about timeframe of mortality investigation

B. HOENES – discussed logistics, constraints, etc.

M. SMITH – noted very impressive on the response time, referenced a cougar kill on his property

- M. SMITH – asked by allowing females with the disease to produce are we keeping the population diseased?
- B. HOENES – noted that as a tough question, and WDFW unable to answer.
- S. JONKER – noted some of the transmission work will help inform that
- AOUDE- adds that most females aren't producing until they are 2, by the time they are able to breed they would have a high level of disease progression
- S. JONKER – adds you can see full blown disease in 9 months
- M. SMITH – clarifies if cows dying at 2 with the disease (referring to A. AOUDE comment above)
- AOUDE and B. HOENES – clarified that elk can live a long time with the disease. Stopping them from reproducing isn't suggested as a solution to disease presence in a herd.

Population monitoring

Using sightability models to assess population levels

Observed substantial decline in population this year.

Caveats, collared elk detection was really low and can bias estimate low. Low variance around estimate. Calf-cow ratio remained high, but that is atypical if the population had a major decline. Have to keep monitoring to assess if accurate.

- M. SMITH – asks for the population estimate
- B. HOENES – answers just under 4 thousand in those MSH GMUs.
- M. SMITH – clarifies that as a drop from the 2012 estimate
- B. HOENES – notes to not put a big emphasis on that [2012] estimate.
- M. SMITH – clarifies definitely been a reduction in the population
- J. NELSON – points out the aggressive years on antlerless harvests, can't necessarily identify only hoof disease
- B. HOENES – starting in 2013 [WDFW] backed off the antlerless harvests
- S. JONKER – noted about a 30% reduction and reduced permit opportunity this year as well
- B. HOENES – remarked marked animals show we aren't taking a big proportion of the population based on collars
- W. Clifford – clarify that population has dropped but cows are still having high calf numbers?
- B. HOENES – answers yes. Provides anecdote about lactating elk in the fall that died, maybe their calf survives that and makes it through winter.
- M. SMITH – asks if calf survival rates are available?
- B. HOENES – answers no
- A. AOUDE – notes that spike [survival] can give you an estimate of calf survival.
- B. HOENES – agrees

Break. 1439

Partnership with WSU - S. Jonker 1453

Senate Bill 5474 passed and funded by Washington legislature identifying WSU role in monitoring and research of TAHD.

- A. AOUDE – Notes the Department still has management authority on elk, no work takes place without a collaboration, reached out to WSU and moving forward in a partnership. They [WSU] are in the process of identifying their lead.
- C. POWELL – brought a copy of draft job description and WSU accepting through November. Project is moving very fast but still will take time in order to be successful. WSU has identified space for the research laboratories from Dr. Besser. Lot of work to be done and they are in the middle of it. Will be overseen by Dr. Bob Mealey and advised by Dr. Tom Besser.

- M. SMITH – addresses biggest public question is who will be making the decision on the progression of research?
- C. POWELL – WSU is charged with leading the research effort, but can't without a partnership with WDFW. Anecdote about birds of prey. WSU lead will lead the research effort with input and cooperation with WDFW.
- W. Clifford – asks about anticipated biosecurity issues.
- C. POWELL – answers the lab is bio safety level 2 and must pass inspection. WSU is well versed and skilled in biocontainment.
- M. SMITH – remarks the legislature was generous, probably not enough, are there plans for soliciting future funding.
- C. POWELL – WSU is always looking for future funding. Most comes from competitive grants and funding. Always look for partners.
- M. SMITH – will DFW put a line item?
- A. AOUDE – answers not this biennium.
- M. SMITH – notes the cost is going to get big fast
- A. AOUDE – answers yes, WDFW wants to contribute when we can
- M. SMITH – says need to look at expanding our efforts. Entire state. Private groups and sportsman's groups
- A. AOUDE – agrees. Looking for innovative funding sources.
- C. POWELL – Rocky Crate chair for bighorn disease research is a good example. Rocky Crate left his estate to bighorn sheep research. Private endowment. Explained how an endowment works
- D. COTHREN – can't stress enough. Represent the public. They'd like to see some results, recognizes it's a slow process. Actually getting something done. Disease has been around a long time and the people are frustrated. Willing to go and lobby. There's been a large frustration. We're here as an advisory group but also as a thorn in the side to make sure work is done.
- M. SMITH – references specific wording of the bill (quotes) do you have that available?
- C. POWELL – answers WSU is in the process of creating and partnering
- M. SMITH – quotes rules section of act. Is that going to happen?
- A. AOUDE – answers yes
- M. SMITH – notes the public is going to hold you [WDFW, WSU] accountable in a very difficult situation
- S. JONKER – hands out copies of job description
- C. POWELL – remarks the door swings both ways. They have bighorn folks visit, encourage hoof disease folks to as well
- A. AOUDE – notes that bighorn pneumonia has been around for decades. Complex issues that will take time.
- M. SMITH – group has gone years without being updated. Requests facts not fiction. Looking forward to science of WSU. Little actual fact. Asks rhetorically is it in the ground? Hoof? Food?
- A. AOUDE – reiterating that wildlife diseases are not things that can be solved overnight. The bighorn issue is still ongoing and has been around for decades. Remarks on his own experience of seeing a lot of wildlife diseases and most are still out there.
- C. POWELL – adds that no one wants them to be out there. Issues in elk may help dairy industry and vice versa. Look at what it takes to control in dairy cattle, glimpse of what we can do with elk
- M. SMITH – Thanks the farm bureau for the Bill passage
- S. JONKER – clarifies WDFW does have a diagnosis (in response to earlier comment) from 2014, treponeme-associated hoof disease and backed by external agreement. It's complicated, and other factors may be involved, but we have a good idea of what the disease is.
-

Next steps– S. JONKER

WDFW will work with WSU to prioritize and address information needs. WDFW will remain adaptive to with respect to management and research. The public working group will be modified to more appropriately represent the expanded scope of the disease and WDFW will work with Tribal partners in a management working group.

Open to questions from Public Working Group

C. MADSEN – references map early on where treponeme had been identified, asks if there are any outstanding samples? New samples? Where?

S. JONKER – answers no outstanding samples, focusing on new reports where the disease hasn't been seen.

B. HOENES – notes in Skagit, we'd be interested in areas outside of known infection

M. SMITH – remarks 3 regions affected in WDFW, how many staff are dedicated to this issue?

S. JONKER – B. Hoenes, K. Garrison, Program Managers, A. Aoude, District staff

M. SMITH – asks for further clarification who is dedicated?

A. AOUDE – K. Garrison

M. SMITH – asks to date, how much money has been spent?

A. AOUDE – answers we can get that

M. SMITH – asks what's in the budget?

B. HOENES – we have a budget for general hoof disease, survival, prevalence

J. NELSON – clarifies budget varies from year to year. Biennium to biennium

M. SMITH – state wants to know if the state invests in it. The public can help get funding. According to the bill, the lead will be WSU. All the work you are planning to do; does WSU agree you should be doing what you are doing? Will WSU be reviewing what WDFW is doing for their mission?

C. POWELL – there will always be some kind of review, it makes for good science. But bottom-line WSU relative to research is in agreement with WDFW efforts. They respect what WDFW has done. And what WSU is doing will depend on who they hire and how much input there will be. WSU direction could be very different depending on who they hire (e.g., epidemiologist vs. bacteriologist). Multiple approaches to these questions

A. AOUDE – to be clear, they've been given the authority to research on disease, but WDFW still has management authority and will still be doing management research.

C. MADSEN – anticipated development of the new management working group?

A. AOUDE – WSU needs to be up and running so we are doing it together.

C. MADSEN – SW focused issue but has changed, would prefer an opportunity to have a pre meeting with tribal component.

A. AOUDE – sensitive to that. We can't set a date but we're in agreement. New group will be more inclusive, new partner, new money, expanded scope

M. SMITH – follows new citizens group?

A. AOUDE – don't anticipate another meeting like this group, there will be new group members, different type of membership, who groups elect to represent them. WSU won't have someone on board until 2018. Don't anticipate anything soon.

B. MOELLER – not clear on the point person and when the next meeting will be held

A. AOUDE – new policy lead is A. Aoude and new coordinator is K. Garrison.

B. MOELLER – email everybody on the working group with contact and position information

Public testimony 1527

B. Barnes

Avid elk hunter, sportsman. If we took this long on eboli (sic) we'd all be dead. Concerned that we still have people out hunting these elk. No funding? We're in this building. Covered 60miles and saw no elk. Too much harvest, too many seasons, not enough elk. At what point are we not going to have any elk left. Counts are off. Model is broken, and need to look at it. All southwestern Washington hunters should be refunded. Hope is that WSU is objective. Habitat, herbicides, elk foaming at the mouth. Wants the problem solved. Wildlife are abundant and flourishing elsewhere and we don't have it in Washington. Has tried to get funding, doing his part, hopes WDFW is doing theirs. Really sick of limping and dying elk.

Tino Villaluz

Wildlife manager in Region 4

Mentioned bighorn sheep and wildlife disease. You can cull, be proactive. States that we failed the resource. Will of the people that wildlife managers aren't doing a good job. Why aren't we going in to smaller populations where we can monitor and control and cull and be proactive. We've only been reactive. To leadership – you've hired adequate staff, but we're driven by political interests. The animals lose. He would like to see what's best for the animals. Can we listen to the technical expertise?

A. AOUDE – yes, we are looking at proactive management. We need to be able to monitor. We have some tools available now. We're getting to the point.

T. Villaluz – small populations are amenable. Owe it to the animals. Can't sit on the sidelines and watch. No easy solutions. As wildlife managers we need to take control.

C. POWELL – with regard to depopulation. You have to have the information like prevalence to know if culling would work. We have to know the distribution, and we work with those models in domestic animals.

T. Villaluz – Brock, are you getting the information needed to make management level decisions prior to conclusion of the study?

B. HOENES – doesn't think we're very close. Won't know how to analyze the data completely until the project is done. Lot of confounding variables. Looking at long term trajectory of the population? Are the trends adjustable through harvest? In the end we may need to develop models to simulate the populations.

A. AOUDE – do plan to do some management experiments

S. JONKER – getting with our management group to discuss this

Steve Rader:

Haven't heard anyone talk about curing the disease? How does what WDFW support the curing process? Why haven't we done captive studies? Are we planning to take elk in a captive study and why we aren't doing controlled experiments on elk? Gun to head analogy – need a cure in 6 months would you be doing the same thing? If we did the same things with humans, we'd have a lot of sick people.

A. AOUDE – DFW not ok with it taking 15-20 years. It's been documented time and time again in wildlife disease. Pneumonia and bighorn have been in pens for decades. Can't oversimplify disease research, it takes a long time and there is a danger to concentrating a disease in animals. CWD reference. That's why we use experimental models. All based on experience that has occurred in wildlife species. SR – can't pen them?

A. AOUDE – can't logistically pen elk. Difficult to logistically work with. And if a cure is found you can't cure on a landscape scale. It won't always make sense. And the disease is terrible. A facility suggested would cost millions and millions of dollars.

SR – wildlife refuges, why can't we do it there?

A. AOUDE – specific needs for captive animals, way more complex than we would all like it to be.

S. JONKER – in interest of giving everyone opportunity to provide testimony, we'd be happy to speak more about this topic after the meeting in more depth.

Gene Crocker

Been in Cowlitz county and hunted here for 60 years. Very concerned about herbicide sprays and its effects on wildlife, including elk in southwestern Washington. Advocates that herbicides are no longer used on timberlands.

B. Mora

Proposes that leptospira are responsible for hoof rot and outlined his reasoning describing Koch's postulates. Describes leptospirosis as the most common zoonosis in the world in mammals. Can cause many mortal diseases and epidemics in mammals. Believes leptospirosis deserves additional research attention and WDFW has propagandized treponeme bacteria as the causative agent for hoof disease.

T. Leback

Ryderwood hunter. Related her experience trying to find information on elk hoof disease and expressed a desire that WDFW would engage in more outreach with hunters and the public. There is a lot of speculation about the disease and she tries to spread the word but there must be more outreach beyond the regulations and the website. Suggests that the information about TAHD is placed in a more convenient place within the regulations.

Bruce Alber

See below:

Elk Hoof Disease Public Working Group Meeting August 15th, 2017

Bruce Alber, Certified Forester
White Salmon, Washington

Elk Hoof Rot discussion points:

I am a professional forester, certified by the Society of American Foresters. I have over 43 years of field experience in reforestation projects in the Pacific Northwest. I have a Bachelor of Science in Forest Resource Management from the University of Washington.

I have a love for the outdoors, its wildlife and the forest products that we produce sustainably for generations to come.

- 1) Forest herbicides are used to control weeds and grasses that compete for light and moisture in areas that have been harvested and replanted with small tree seedlings. In our summer drought here in Washington, we usually see over 90% of the seedlings die in the first year or two if they are planted into a grassy, weedy area. These must be controlled so the forest can grow back. Herbicides are the most effective and environmentally friendly method. After a herbicide application, the weeds and grasses die for a year or so and then plants re-populate the area providing food and forage for deer, elk, and other critters.
- 2) Research by universities and others have shown that herbicide use in the Pacific Northwest forest lands have created more quality forage available for animals than allowing the weeds and brush grow back after logging. This seems odd, but herbicides control many noxious weeds as well as those with little to no food value for the animals. Unsprayed areas have forage available from 1-8 years after logging and then it grows too tall to be used by animals. The sprayed areas show that the forage is good from 2-15 years after logging. The forage species that grows back is of higher quality and food value and available for a longer period of time.
- 3) Some have claimed that 90% of the herbicides used by Weyerhaeuser say "don't use on grazing land." That is not correct. I looked at all of the product labels for any wording about grazing restrictions.

First, the term grazing restrictions is in reference to domestic animals only and not wildlife. There are some other product labels that refer to wildlife, but not any of the ones that we use in reforestation projects.

The following products did not have any grazing restrictions at all for forestry applications:

- Rodeo
- Accord XRT II
- Imazapyr 4 SL
- Garlon 4 Ultra
- Oust XP
- Oust Extra
- Opensight
- Transline
- Esplanade F

Elk Hoof Disease Public Working Group Meeting August 15th, 2017

Two products did have discussion on grazing livestock:

Atrazine: Graze after 3 month after a winter or spring application

Velpar DF: Livestock may be grazed immediately after a broadcast application of 1.5# or less per acre. For applications greater than 1.5# per acre, livestock may be grazed 60 days after the application.

Again, the EPA approved labels do not discuss wildlife as they can move from area to area for feeding, whereas livestock are confined to a specific area.

- 4) Forest herbicides are rated as extremely low to very low in toxicity for animals in the concentrated form out of the jug. Then we dilute them with water. Most herbicides are less toxic than table salt.
- 5) Forest herbicides are used at very low rates and are diluted greatly in water to be sprayed onto the vegetation. For example, Velpar is often mixed with one part chemical and 10 to 20 parts water. Rodeo herbicide is mixed one part Rodeo with 20 to 40 parts water. Imazapyr 4 SL is mixed one part chemical to 13,000 to 27,000 parts water. Oust Extra is mixed one part chemical to 40,000 parts water.
- 6) Forest herbicides are used on lands in Washington, Oregon, California, Idaho, and Montana. Hoof rot is not seen in these other states, even though they have the same reforestation practices. Herbicides are not the cause of hoof rot in elk.



A Douglas fir seedling dying due to grass competition this summer.

Bruce Alber, CF
White Salmon, WA